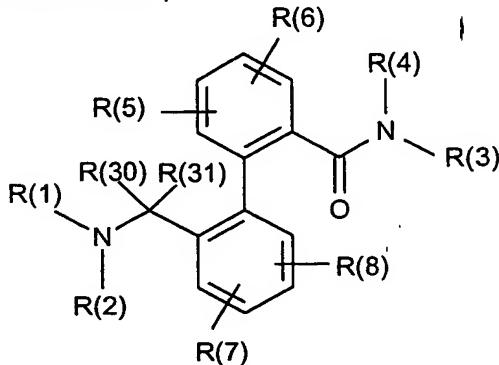


We claim:

1. A compound of the formula I,



5

in which:

R(1) is $\text{C}(\text{O})\text{OR}(9)$, $\text{SO}_2\text{R}(10)$, $\text{COR}(11)$, $\text{C}(\text{O})\text{NR}(12)\text{R}(13)$ or

$\text{C}(\text{S})\text{NR}(12)\text{R}(13)$;

R(9) is $\text{C}_x\text{H}_{2x}\text{-R}(14)$;

10

x is 0, 1, 2, 3 or 4,

where x cannot be 0 if R(14) is OR(15) or SO_2Me ;

R(14) is alkyl having 1, 2, 3, 4, 5 or 6 carbon atoms, cycloalkyl having 3, 4, 5, 6, 7, 8, 9, 10 or 11 carbon atoms, CF_3 , C_2F_5 , C_3F_7 , CH_2F , CHF_2 , OR(15), SO_2Me , phenyl, naphthyl, biphenyl, furyl, thieryl or an N-containing heteroaromatic having 1, 2, 3, 4, 5, 6, 7, 8 or 9 carbon atoms,

where phenyl, naphthyl, biphenyl, furyl, thieryl and the N-containing heteroaromatic are unsubstituted or substituted by 1, 2 or 3 substituents selected from the

group consisting of F, Cl, Br, I, CF_3 , OCF_3 , NO_2 , CN, COOMe , CONH_2 , COMe , NH_2 , OH, alkyl having 1, 2, 3 or 4 carbon atoms, alkoxy having 1, 2, 3 or 4 carbon atoms, dimethylamino, sulfamoyl, methylsulfonyl and methylsulfonylamino;

R(15) is alkyl having 1, 2, 3, 4 or 5 carbon atoms, cycloalkyl having 3, 4, 5 or 6 carbon atoms, CF_3 or phenyl which is unsubstituted or substituted by 1, 2 or 3

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substituents selected from the group consisting of F, Cl, Br, I, CF₃, NO₂, CN, COOMe, CONH₂, COMe, NH₂, OH, alkyl having 1, 2, 3 or 4 carbon atoms, alkoxy having 1, 2, 3 or 4 carbon atoms, dimethylamino, sulfamoyl, methylsulfonyl and methylsulfonylamino;

5

R(10), R(11) and R(12)

independently of one another are defined as R(9);

10 R(13) is hydrogen, alkyl having 1, 2, 3 or 4 carbon atoms or CF_3 ;

R(2) is hydrogen, alkyl having 1, 2, 3 or 4 carbon atoms or CF_3 ;

$R(3)$ is $C_yH_{2y}-R(16)$;

v is 0, 1, 2, 3 or 4.

where ν cannot be 0 if $R(16)$ is $OR(17)$ or SO_2Me ;

15 R(16) is alkyl having 1, 2, 3, 4, 5 or 6 carbon atoms, cycloalkyl having 3, 4, 5, 6, 7, 8, 9, 10 or 11 carbon atoms, CF₃, C₂F₅, C₃F₇, CH₂F, CHF₂, OR(17), SO₂Me, phenyl, naphthyl, furyl, thieryl or an N-containing heteroaromatic having 1, 2, 3, 4, 5, 6, 7, 8 or 9 carbon atoms,

20 where phenyl, naphthyl, furyl, thiienyl and the
N-containing heteroaromatic are unsubstituted or
substituted by 1, 2 or 3 substituents selected from
the group consisting of F, Cl, Br, I, CF₃, OCF₃,
NO₂, CN, COOMe, CONH₂, COMe, NH₂, OH, alkyl
25 having 1, 2, 3 or 4 carbon atoms, alkoxy having 1,
2, 3 or 4 carbon atoms, dimethylamino, sulfamoyl,
methylsulfonyl and methylsulfonylamino;

R(17) is hydrogen, alkyl having 1, 2, 3, 4 or 5 carbon atoms, cycloalkyl having 3, 4, 5 or 6 carbon atoms, CF₃, phenyl or 2-, 3- or 4-pyridyl,

dimethylamino, sulfamoyl, methylsulfonyl and methylsulfonylamino;

or

R(3) is $\text{CHR}(18)\text{R}(19)$;

5 R(18) is hydrogen or $\text{C}_z\text{H}_{2z}\text{-R}(16)$, where R(16) is defined as indicated above;

z is 0, 1, 2 or 3;

10 R(19) is COOH , CONH_2 , $\text{CONR}(20)\text{R}(21)$, $\text{COOR}(22)$, or CH_2OH ; R(20) is hydrogen, alkyl having 1, 2, 3, 4 or 5 carbon atoms, $\text{C}_v\text{H}_{2v}\text{-CF}_3$ or $\text{C}_w\text{H}_{2w}\text{-phenyl}$,

where the phenyl ring is unsubstituted or substituted by 1, 2 or 3 substituents selected from the group consisting of F, Cl, Br, I, CF_3 , NO_2 , CN, COOMe , CONH_2 , COMe , NH_2 , OH, alkyl having 1, 2, 3 or 4 carbon atoms, alkoxy having 1, 2, 3 or 4 carbon atoms, dimethylamino, sulfamoyl, methylsulfonyl and methylsulfonylamino;

v is 0, 1, 2 or 3;

20 w is 0, 1, 2 or 3;

R(21) is hydrogen or alkyl having 1, 2, 3, 4 or 5 carbon atoms;

R(22) is alkyl having 1, 2, 3, 4 or 5 carbon atoms;

R(4) is hydrogen, alkyl having 1, 2, 3, 4, 5 or 6 carbon atoms or CF_3 ;

25 or

R(3) and R(4)

together are a chain of 4 or 5 methylene groups, of which one methylene group can be replaced by -O-, -S-, -NH-, -N(methyl)- or -N(benzyl)-;

30 R(5), R(6), R(7) and R(8)

independently of one another are hydrogen, F, Cl, Br, I, CF_3 , NO_2 , CN, COOMe , CONH_2 , COMe , NH_2 , OH, alkyl having 1, 2, 3 or 4 carbon atoms, alkoxy having 1, 2, 3 or 4 carbon atoms, dimethylamino, sulfamoyl, methylsulfonyl or methylsulfonylamino;

35 R(30) and R(31)

independently of one another are hydrogen or alkyl having 1, 2 or 3 carbon atoms;

or

R(30) and R(31)

together form a chain of 2 methylene groups;
or a pharmaceutically acceptable salt thereof.

5 2. A compound as claimed in claim 1, in which

R(1) is C(O)OR(9), SO₂R(10), COR(11) or C(O)NR(12)R(13);

R(9) is C_xH_{2x}-R(14);

x is 0, 1, 2, 3 or 4,

where x cannot be 0 if R(14) is OR(15);

10 R(14) is alkyl having 1, 2, 3 or 4 carbon atoms, cycloalkyl having 3, 4, 5, 6, 7, 8 or 9 carbon atoms, CF₃, C₂F₅, OR(15), phenyl, furyl, thienyl or an N-containing heteroaromatic having 1, 2, 3, 4, 5, 6, 7, 8 or 9 carbon atoms,

15 where phenyl, furyl, thienyl and the N-containing heteroaromatic are unsubstituted or substituted by 1, 2 or 3 substituents selected from the group consisting of F, Cl, Br, CF₃, OCF₃, NO₂, CN, COOMe, CONH₂, COMe, NH₂, OH, alkyl having 1, 2, 3 or 4 carbon atoms, alkoxy having 1, 2, 3 or 4 carbon atoms, dimethylamino, sulfamoyl, methylsulfonyl and methylsulfonylamino;

20 25 R(15) is alkyl having 1, 2, 3, 4 or 5 carbon atoms, cycloalkyl having 3, 4, 5 or 6 carbon atoms, CF₃ or phenyl,

which is unsubstituted or substituted by 1, 2 or 3 substituents selected from the group consisting of F, Cl, Br, CF₃, NO₂, CN, COOMe, CONH₂, COMe, OH, alkyl having 1, 2, 3 or 4 carbon atoms, alkoxy having 1, 2, 3 or 4 carbon atoms, dimethylamino, sulfamoyl, methylsulfonyl and methylsulfonylamino;

30

35

R(10), R(11) and R(12)

independently of one another are defined as R(9);

R(13) is hydrogen, alkyl having 1, 2, 3 or 4 carbon atoms or CF₃;

R(2) is hydrogen, alkyl having 1, 2, 3 or 4 carbon atoms or CF₃;

R(3) is C_yH_{2y}-R(16);

5 y is 0, 1, 2, 3 or 4,
where y cannot be 0 if R(16) is OR(17);

R(16) is alkyl having 1, 2, 3 or 4 carbon atoms, cycloalkyl having 3, 4, 5, 6, 7, 8 or 9 carbon atoms, CF₃, C₂F₅, OR(17), phenyl, furyl, thienyl or an N-containing heteroaromatic having 1, 2, 3, 4, 5, 6, 7, 8 or 9 carbon atoms,

10 where phenyl, furyl, thienyl and the N-containing heteroaromatic are unsubstituted or substituted by 1, 2 or 3 substituents selected from the group consisting of F, Cl, Br, CF₃, OCF₃, NO₂, CN, COOMe, CONH₂, COMe, NH₂, OH, alkyl having 1, 2, 3 or 4 carbon atoms, alkoxy having 1, 2, 3 or 4 carbon atoms, dimethylamino, sulfamoyl, methylsulfonyl and methylsulfonylamino;

15 R(17) is alkyl having 1, 2, 3, 4 or 5 carbon atoms, cycloalkyl having 3, 4, 5 or 6 carbon atoms, CF₃, phenyl or 2-, 3-, or 4-pyridyl,
where phenyl or 2-, 3- or 4-pyridyl are unsubstituted or substituted by 1, 2 or 3 substituents selected from the group consisting of F, Cl, Br, CF₃, OCF₃, NO₂, CN, COOMe, CONH₂, COMe, OH, alkyl having 1, 2, 3 or 4 carbon atoms, alkoxy having 1, 2, 3 or 4 carbon atoms, dimethylamino, sulfamoyl, methylsulfonyl and methylsulfonylamino;

20

25

30

or

R(3) is CHR(18)R(19);

R(18) is hydrogen or C_zH_{2z}-R(16), where R(16) is defined as indicated in claim 1 above;

35 z is 0, 1, 2 or 3;

R(19) is CONH₂, CONR(20)R(21), COOR(22), CH₂OH;

R(20) is hydrogen, alkyl having 1, 2, 3, 4 or 5 carbon atoms, C_vH_{2v}-CF₃ or C_wH_{2w}-phenyl,

5

where the phenyl ring is unsubstituted or substituted by 1, 2 or 3 substituents selected from the group consisting of F, Cl, Br, CF₃, OCF₃, NO₂, CN, COOMe, CONH₂, COMe, NH₂, OH, alkyl having 1, 2, 3 or 4 carbon atoms, alkoxy having 1, 2, 3 or 4 carbon atoms, dimethylamino, sulfamoyl, methylsulfonyl and methylsulfonylamino;

10

v is 0, 1, 2 or 3;

w is 0, 1, 2 or 3;

R(21) is hydrogen or alkyl having 1, 2, 3, 4 or 5 carbon atoms;

R(22) is alkyl having 1, 2, 3, 4 or 5 carbon atoms;

15 R(4) is hydrogen, alkyl having 1, 2, 3, 4, 5 or 6 carbon atoms or CF₃; and

R(5), R(6), R(7) and R(8)

independently of one another are hydrogen, F, Cl, Br, CF₃, NO₂, CN, COOMe, CONH₂, COMe, NH₂, OH, alkyl having 1, 2, 3 or 4 carbon atoms, alkoxy having 1, 2, 3 or 4 carbon atoms, dimethylamino, sulfamoyl, methylsulfonyl or methylsulfonylamino;

20 R(30) and R(31)

independently of one another are hydrogen or alkyl having 1, 2 or 3 carbon atoms;

25 or

R(30) and R(31)

together form a chain of 2 methylene groups.

30 3. A compound as claimed in claim 2, in which:

R(1) is C(O)OR(9), SO₂R(10), COR(11) or C(O)NR(12)R(13);

R(9) is C_xH_{2x}-R(14);

x is 0, 1, 2, 3 or 4,

where x cannot be 0 if R(14) is OR(15);

35 R(14) is cycloalkyl having 3, 4, 5, 6, 7, 8 or 9 carbon atoms, CF₃, OR(15), phenyl, furyl, thienyl or an N-containing heteroaromatic having 3, 4 or 5 carbon atoms,

5 where phenyl, furyl, thienyl and the N-containing heteroaromatic are unsubstituted or substituted by 1 or 2 substituents selected from the group consisting of F, Cl, Br, CF₃, OCF₃, CN, COOMe, CONH₂, COMe, OH, alkyl having 1, 2 or 3 carbon atoms, alkoxy having 1 or 2 carbon atoms, dimethylamino, sulfamoyl, methylsulfonyl and methylsulfonylamino;

10 R(15) is alkyl having 1 or 2 carbon atoms, cycloalkyl having 3, 4, 5 or 6 carbon atoms, CF₃ or phenyl, which is unsubstituted or substituted by 1 or 2 substituents selected from the group consisting of F, Cl, Br, CF₃, CN, COOMe, CONH₂, COMe, OH, alkyl having 1, 2 or 3 carbon atoms, alkoxy having 1 or 2 carbon atoms, dimethylamino, sulfamoyl, methylsulfonyl and methylsulfonylamino;

15 R(10), R(11) and R(12) independently of one another are defined as R(9); R(13) is hydrogen;

20 R(2) is hydrogen or alkyl having 1, 2 or 3 carbon atoms;

R(3) is CHR(18)R(19);

25 R(18) is hydrogen or C_zH_{2z}-R(16); z is 0, 1, 2 or 3;

R(19) is CONH₂, CONR(20)R(21), COOR(22) or CH₂OH; R(20) is hydrogen, alkyl having 1, 2, 3, 4 or 5 carbon atoms, C_vH_{2v}-CF₃ or C_wH_{2w}-phenyl, where the phenyl ring is unsubstituted or substituted by 1, 2 or 3 substituents selected from the group consisting of F, Cl, Br, CF₃, OCF₃, CN, COOMe, CONH₂, COMe, OH, alkyl having 1, 2 or 3 carbon atoms, alkoxy having 1 or 2 carbon atoms, dimethylamino, sulfamoyl, methylsulfonyl and methylsulfonylamino;

30 v is 0, 1, 2 or 3;

w is 0, 1, 2 or 3;

35

R(21) is hydrogen or alkyl having 1, 2, 3, 4 or 5 carbon atoms;

R(22) is alkyl having 1, 2, 3, 4 or 5 carbon atoms;

5

R(16) is alkyl having 1, 2 or 3 carbon atoms, cycloalkyl having 3, 4, 5, 6, 7, 8 or 9 carbon atoms, CF₃, OR(17), phenyl, furyl, thienyl or an N-containing heteroaromatic having 3, 4 or 5 carbon atoms,

10

where phenyl, furyl, thienyl and the N-containing heteroaromatic are unsubstituted or substituted by 1 or 2 substituents selected from the group consisting of F, Cl, Br, CF₃, OCF₃, CN, COOMe, CONH₂, COMe, NH₂, OH, alkyl having 1, 2 or 3 carbon atoms, alkoxy having 1 or 2 carbon atoms, dimethylamino, sulfamoyl, methylsulfonyl and methylsulfonylamino;

15

R(17) is alkyl having 1, 2, 3 or 4 carbon atoms, cycloalkyl having 3, 4, 5 or 6 carbon atoms, CF₃, phenyl or 2-, 3- or 4-pyridyl,

20

where phenyl or 2-, 3- or 4-pyridyl are unsubstituted or substituted by 1, 2 or 3 substituents selected from the group consisting of F, Cl, Br, CF₃, OCF₃, CN, COOMe, CONH₂, COMe, OH, alkyl having 1, 2, 3 or 4 carbon atoms, alkoxy having 1, 2, 3 or 4 carbon atoms, dimethylamino, sulfamoyl, methylsulfonyl and methylsulfonylamino;

25

30

R(4) is hydrogen or alkyl having 1 or 2 carbon atoms; and

R(5), R(6), R(7) and R(8)

35

independently of one another are hydrogen, F, Cl, Br, CF₃, CN, COOMe, CONH₂, COMe, NH₂, OH, alkyl having 1, 2 or 3 carbon atoms, alkoxy having 1 or 2 carbon atoms, dimethylamino, sulfamoyl, methylsulfonyl or methylsulfonylamino;

R(30) and R(31)

independently of one another are hydrogen or methyl;

or

R(30) and R(31)

together form a chain of 2 methylene groups.

5

4. A compound as claimed in claim 2, in which:

R(1) is C(O)OR(9), SO₂R(10), COR(11) or C(O)NR(12)R(13);

R(9) is C_xH_{2x}-R(14);

x is 0, 1, 2, 3 or 4,

10

where x cannot be 0 if R(14) is OR(15);

R(14) is alkyl having 1, 2, 3 or 4 carbon atoms, cycloalkyl having 3, 4, 5, 6, 7, 8 or 9 carbon atoms, CF₃, OR(15), phenyl, furyl, thienyl or an N-containing heteroaromatic having 3, 4 or 5 carbon atoms,

15

where phenyl, furyl, thienyl and the N-containing heteroaromatic are unsubstituted or substituted by 1 or 2 substituents selected from the group consisting of F, Cl, Br, CF₃, OCF₃, CN, COOMe, CONH₂, COMe, OH, alkyl having 1, 2 or 3 carbon atoms, alkoxy having 1 or 2 carbon atoms, dimethylamino, sulfamoyl, methylsulfonyl and methylsulfonylamino;

20

R(15) is alkyl having 1 or 2 carbon atoms, cycloalkyl having 3, 4, 5 or 6 carbon atoms, CF₃ or phenyl,

25

which is unsubstituted or substituted by 1 or 2 substituents selected from the group consisting of F, Cl, Br, CF₃, CN, COOMe, CONH₂, COMe, OH, alkyl having 1, 2 or 3 carbon atoms, alkoxy having 1 or 2 carbon atoms, dimethylamino, sulfamoyl, methylsulfonyl and methylsulfonylamino;

30

R(10), R(11) and R(12)

independently of one another are defined as R(9);

35

R(13) is hydrogen;

R(2) is hydrogen or alkyl having 1, 2 or 3 carbon atoms;

R(3) is $C_yH_{2y}R(16)$;

y is 0, 1, 2, 3 or 4,
where y cannot be 0 if R(16) is OR(17);

5 R(16) is alkyl having 1, 2 or 3 carbon atoms, cycloalkyl having 3, 4, 5, 6, 7, 8 or 9 carbon atoms, CF_3 , OR(17), phenyl, furyl, thienyl or an N-containing heteroaromatic having 3, 4 or 5 carbon atoms,
where phenyl, furyl, thienyl and the N-containing heteroaromatic are unsubstituted or substituted by 1 or 2 substituents selected from the group consisting of F, Cl, Br, CF_3 , OCF_3 , CN, $COOMe$, $CONH_2$, $COMe$, NH_2 , OH, alkyl having 1, 2 or 3 carbon atoms, alkoxy having 1 or 2 carbon atoms, dimethylamino, sulfamoyl, methylsulfonyl and methylsulfonylamino;

10 R(17) is alkyl having 1, 2, 3, 4 or 5 carbon atoms, cycloalkyl having 3, 4, 5 or 6 carbon atoms, CF_3 , phenyl or 2-, 3- or 4-pyridyl,
where phenyl or 2-, 3- or 4-pyridyl are unsubstituted or substituted by 1, 2 or 3 substituents selected from the group consisting of F, Cl, Br, CF_3 , OCF_3 , NO_2 , CN, $COOMe$, $CONH_2$, $COMe$, OH, alkyl having 1, 2, 3 or 4 carbon atoms, alkoxy having 1, 2, 3 or 4 carbon atoms, dimethylamino, sulfamoyl, methylsulfonyl and methylsulfonylamino;

15 R(4) is hydrogen or alkyl having 1 or 2 carbon atoms;

R(5), R(6), R(7) and R(8)

20 independently of one another are hydrogen, F, Cl, Br, CF_3 , CN, $COOMe$, $CONH_2$, $COMe$, NH_2 , OH, alkyl having 1, 2 or 3 carbon atoms, alkoxy having 1 or 2 carbon atoms, dimethylamino, sulfamoyl, methylsulfonyl or methylsulfonylamino;

25 R(30) and R(31)

30 independently of one another are hydrogen or methyl;
or

35 R(30) and R(31)
together form a chain of 2 methylene groups.

5. A compound as claimed in claim 4, in which:

R(1) is C(O)OR(9), SO₂R(10), COR(11) or C(O)NR(12)R(13);

5 R(9) is C_xH_{2x}-R(14);

x is 0, 1, 2 or 3;

R(14) is alkyl having 1, 2, 3 or 4 carbon atoms, cycloalkyl having 3, 4, 5, 6, 7, 8 or 9 carbon atoms, CF₃, phenyl or pyridyl,

10 where phenyl and pyridyl are unsubstituted or substituted by 1 or 2 substituents selected from the group consisting of F, Cl, CF₃, OCF₃, OH, alkyl having 1, 2 or 3 carbon atoms and alkoxy having 1 or 2 carbon atoms;

15 R(10), R(11) and R(12) independently of one another are defined as R(9);

R(13) is hydrogen;

R(2) is hydrogen;

20 R(3) is C_yH_{2y}-R(16);

y is 0, 1 or 2;

R(16) is alkyl having 1, 2 or 3 carbon atoms, cycloalkyl having 5 or 6 carbon atoms, CF₃, phenyl or pyridyl,

25 where phenyl and pyridyl are unsubstituted or substituted by 1 or 2 substituents selected from the group consisting of F, Cl, CF₃, OCF₃, OH, alkyl having 1, 2 or 3 carbon atoms and alkoxy having 1 or 2 carbon atoms;

R(4) is hydrogen; and

30 R(5), R(6), R(7) and R(8)

independently of one another are hydrogen, F, CF₃, CN, COOMe, CONH₂, NH₂, OH, alkyl having 1, 2 or 3 carbon atoms or alkoxy having 1 or 2 carbon atoms;

R(30) and R(31)

35 independently of one another are hydrogen or methyl;

or

R(30) and R(31)

together form a chain of 2 methylene groups.

6. A compound as claimed in claim 5, in which:

R(1) is C(O)OR(9) or COR(11);

R(9) is C_xH_{2x}-R(14);

5 x is 0, 1, 2 or 3;

R(14) is cycloalkyl having 5 or 6 carbon atoms or phenyl,
where phenyl is unsubstituted or
substituted by 1 or 2 substituents selected
from the group consisting of F, Cl, CF₃,
10 OCF₃, alkyl having 1, 2 or 3 carbon atoms
and alkoxy having 1 or 2 carbon atoms;

R(11) is defined as R(9);

R(2) is hydrogen;

R(3) is C_yH_{2y}-R(16);

15 y is 0, 1 or 2;

R(16) is alkyl having 1, 2 or 3 carbon atoms, cycloalkyl having 5
or 6 carbon atoms, CF₃, phenyl or pyridyl
where phenyl and pyridyl are unsubstituted or
substituted by 1 or 2 substituents selected from the
20 group consisting of F, Cl, CF₃, OCF₃, alkyl having
1, 2 or 3 carbon atoms and alkoxy having 1 or 2
carbon atoms;

R(4) is hydrogen; and

R(5), R(6), R(7) and R(8)

25 independently of one another are hydrogen, F, CF₃, alkyl having 1,
2 or 3 carbon atoms or alkoxy having 1 or 2 carbon atoms;

R(30) and R(31)

are hydrogen.

30

7. A pharmaceutical composition, comprising an effective amount of at
least one compound as claimed in claim 1 together with a pharmaceutically
acceptable vehicle or additive.

35 8. A pharmaceutical composition as claimed in claim 7, which further
comprises one or more other pharmacologically active compounds.

9. A method for the prophylaxis or therapy of a K⁺ channel-mediated illness,

which comprises administering to a host in need of the prophylaxis or therapy an effective amount of a compound as claimed in claim 1.

10. A method for the therapy or prophylaxis of a cardiac arrhythmia which
5 can be eliminated by action potential prolongation, which comprises
administering to a host in need of the therapy or prophylaxis an effective
amount of a compound as claimed in claim 1.
- 10 11. A method for the therapy or prophylaxis of a re-entry arrhythmia, which
comprises administering to a host in need of the therapy or prophylaxis an
effective amount of a compound as claimed in claim 1.
- 15 12. A method for the therapy or prophylaxis of a supraventricular arrhythmia,
which comprises administering to a host in need of the therapy or
prophylaxis an effective amount of a compound as claimed in claim 1.
13. A method for the therapy or prophylaxis of atrial fibrillation or atrial
flutter, which comprises administering to a host in need of the therapy or
prophylaxis an effective amount of a compound as claimed in claim 1.
20
14. A method for terminating existing atrial fibrillation or flutter to restore
sinus rhythm, which comprises administering to a host in need of the
termination an effective amount of a compound as claimed in claim 1.
- 25 15. A pharmaceutical composition as claimed in claim 7, which further
comprises an effective amount of an IKr channel blocker.
16. A pharmaceutical composition as claimed in claim 7, which further
comprises an effective amount of an IKs channel blocker.
30
17. A pharmaceutical composition as claimed in claim 7, which further
comprises an effective amount of a beta-blocker.
18. A compound as claimed in claim 1, in which:
35 R(1) is C(O)OR(9), SO₂R(10), COR(11) or C(O)NR(12)R(13);
R(9) is C_xH_{2x}-R(14);
x is 0, 1, 2, 3 or 4,
where x cannot be 0 if R(14) is OR(15);

R(14) is cycloalkyl having 3, 4, 5, 6, 7, 8 or 9 carbon atoms, CF₃, OR(15), phenyl, furyl, thienyl or an N-containing heteroaromatic having 3, 4 or 5 carbon atoms,

5 where phenyl, furyl, thienyl and the N-containing heteroaromatic are unsubstituted or substituted by 1 or 2 substituents selected from the group consisting of F, Cl, Br, CF₃, OCF₃, CN, COOMe, CONH₂, COMe, OH, alkyl having 1, 2 or 3 carbon atoms, alkoxy having 1 or 2 carbon atoms, dimethylamino, sulfamoyl, methylsulfonyl and methylsulfonylamino;

10 R(15) is alkyl having 1 or 2 carbon atoms, cycloalkyl having 3, 4, 5 or 6 carbon atoms, CF₃ or phenyl, which is unsubstituted or substituted by 1 or 2 substituents selected from the group consisting of F, Cl, Br, CF₃, CN, COOMe, CONH₂, COMe, OH, alkyl having 1, 2 or 3 carbon atoms, alkoxy having 1 or 2 carbon atoms, dimethylamino, sulfamoyl, methylsulfonyl and methylsulfonylamino;

15 R(10), R(11) and R(12) independently of one another are defined as R(9);

20 R(13) is hydrogen;

R(2) is hydrogen or alkyl having 1, 2 or 3 carbon atoms;

R(3) is CHR(18)R(19);

R(18) is hydrogen or C_zH_{2z}-R(16);

30 z is 0, 1, 2 or 3;

R(19) is CONH₂, CONR(20)R(21), COOR(22) or CH₂OH;

R(20) is hydrogen, alkyl having 1, 2, 3, 4 or 5 carbon atoms, C_vH_{2v}-CF₃ or C_wH_{2w}-phenyl, where the phenyl ring is unsubstituted or substituted by 1, 2 or 3 substituents selected from the group consisting of F, Cl, Br, CF₃, OCF₃, CN, COOMe, CONH₂, COMe, OH, alkyl having 1, 2 or 3 carbon atoms, alkoxy having 1 or 2 carbon atoms,

35

dimethylamino, sulfamoyl, methylsulfonyl and methylsulfonylamino;

v is 0, 1, 2 or 3;

w is 0, 1, 2 or 3;

5 R(21) is hydrogen or alkyl having 1, 2, 3, 4 or 5 carbon atoms;

R(22) is alkyl having 1, 2, 3, 4 or 5 carbon atoms;

R(16) is alkyl having 1, 2 or 3 carbon atoms, cycloalkyl having 3, 4, 5, 6, 7, 8 or 9 carbon atoms, CF₃, OR(17), phenyl, furyl, thienyl or an N-containing heteroaromatic having 3, 4 or 5 carbon atoms,

10 where phenyl, furyl, thienyl and the N-containing heteroaromatic are unsubstituted or substituted by 1 or 2 substituents selected from the group consisting of F, Cl, Br, CF₃, OCF₃, CN, COOMe, CONH₂, COMe, NH₂, OH, alkyl having 1, 2 or 3 carbon atoms, alkoxy having 1 or 2 carbon atoms, dimethylamino, sulfamoyl, methylsulfonyl and methylsulfonylamino;

15 R(17) is alkyl having 1, 2, 3 or 4 carbon atoms, cycloalkyl having 3, 4, 5 or 6 carbon atoms, CF₃, phenyl or 2-, 3- or 4-pyridyl,

20 where phenyl or 2-, 3- or 4-pyridyl are unsubstituted or substituted by 1, 2 or 3 substituents selected from the group consisting of F, Cl, Br, CF₃, OCF₃, CN, COOMe, CONH₂, COMe, OH, alkyl having 1, 2, 3 or 4 carbon atoms, alkoxy having 1, 2, 3 or 4 carbon atoms, dimethylamino, sulfamoyl, methylsulfonyl and methylsulfonylamino;

25 R(4) is hydrogen or alkyl having 1 or 2 carbon atoms; and

R(5), R(6), R(7) and R(8) independently of one another are hydrogen, F, Cl, Br, CF₃, CN, COOMe, CONH₂, COMe, NH₂, OH, alkyl having 1, 2 or 3 carbon

30

35

atoms, alkoxy having 1 or 2 carbon atoms, dimethylamino, sulfamoyl, methylsulfonyl or methylsulfonylamino;

R(30) and R(31)

independently of one another are hydrogen or methyl;

5 or

R(30) and R(31)

together form a chain of 2 methylene groups.

10 19. A compound as claimed in claim 1, in which:

R(1) is C(O)OR(9), SO₂R(10), COR(11) or C(O)NR(12)R(13);

R(9) is C_xH_{2x}-R(14);

x is 0, 1, 2, 3 or 4,

where x cannot be 0 if R(14) is OR(15);

15 R(14) is alkyl having 1, 2, 3 or 4 carbon atoms, cycloalkyl having 3, 4, 5, 6, 7, 8 or 9 carbon atoms, CF₃, OR(15), phenyl, furyl, thienyl or an N-containing heteroaromatic having 3, 4 or 5 carbon atoms,

where phenyl, furyl, thienyl and the N-containing heteroaromatic are unsubstituted or substituted by 1 or 2 substituents selected from the group consisting of F, Cl, Br, CF₃, OCF₃, CN, COOMe, CONH₂, COMe, OH, alkyl having 1, 2 or 3 carbon atoms, alkoxy having 1 or 2 carbon atoms, dimethylamino, sulfamoyl, methylsulfonyl and methylsulfonylamino;

20 25 R(15) is alkyl having 1 or 2 carbon atoms, cycloalkyl having 3, 4, 5 or 6 carbon atoms, CF₃ or phenyl,

which is unsubstituted or substituted by 1 or 2 substituents selected from the group consisting of F, Cl, Br, CF₃, CN, COOMe, CONH₂, COMe, OH, alkyl having 1, 2 or 3 carbon atoms, alkoxy having 1 or 2 carbon atoms, dimethylamino,

30

35

sulfamoyl, methylsulfonyl and methylsulfonylamino;

R(10), R(11) and R(12)

independently of one another are defined as R(9);

5 R(13) is hydrogen;

R(2) is hydrogen or alkyl having 1, 2 or 3 carbon atoms;

R(3) is $C_yH_{2y}R(16)$;

y is 0, 1, 2, 3 or 4,

where y cannot be 0 if R(16) is OR(17);

10 R(16) is alkyl having 1, 2 or 3 carbon atoms, cycloalkyl having 3, 4, 5, 6, 7, 8 or 9 carbon atoms, CF_3 , OR(17), phenyl, furyl, thienyl or an N-containing heteroaromatic having 3, 4 or 5 carbon atoms,

where phenyl, furyl, thienyl and the N-containing heteroaromatic are unsubstituted or substituted by

15 1 or 2 substituents selected from the group consisting of F, Cl, Br, CF_3 , OCF_3 , CN, COOMe, $CONH_2$, COMe, NH_2 , OH, alkyl having 1, 2 or 3 carbon atoms, alkoxy having 1 or 2 carbon atoms, dimethylamino, sulfamoyl, methylsulfonyl and methylsulfonylamino;

20 R(17) is alkyl having 1, 2, 3, 4 or 5 carbon atoms, cycloalkyl having 3, 4, 5 or 6 carbon atoms, CF_3 , phenyl or 2-, 3- or 4-pyridyl,

25 where phenyl or 2-, 3- or 4-pyridyl are unsubstituted or substituted by 1, 2 or 3 substituents selected from the group consisting of F, Cl, Br, CF_3 , OCF_3 , NO_2 , CN, COOMe, $CONH_2$, COMe, OH, alkyl having 1, 2, 3 or 4 carbon atoms, alkoxy having 1, 2, 3 or 4 carbon atoms, dimethylamino, sulfamoyl, methylsulfonyl and methylsulfonylamino;

30 R(4) is hydrogen or alkyl having 1 or 2 carbon atoms;

R(5), R(6), R(7) and R(8)

35 independently of one another are hydrogen, F, Cl, Br, CF_3 , CN, COOMe, $CONH_2$, COMe, NH_2 , OH, alkyl having 1, 2 or 3 carbon atoms, alkoxy having 1 or 2 carbon atoms, dimethylamino, sulfamoyl, methylsulfonyl or methylsulfonylamino;

R(30) and R(31)

independently of one another are hydrogen or methyl;

or

R(30) and R(31)

5 together form a chain of 2 methylene groups.